APPENDIX A-1

FACILITY INSPECTION FORM FOR COMPLIANCE WITH INTERIM STATUS STANDARDS COVERING GROUND-WATER MONITORING

Company Name: Amoco - Riverfront ; IEPA I.D. Number: LPC1191150001

Company Address: Amoco Riverfront Road; USEPA I.D. Number: ILD980503106

Wood River, Illinois Inspector's Name: M. Dilday

62095

Company Contact/Official: R. Sumner ; Branch/Organization: FOS/IEPA

Title: Environmental Engineer ; Date of Inspection: 2/26/85

	Yes	No	Unknown	Wavied
Type of facility: (check appropriately)				
a) surface impoundment	X			
b) landfill				
c) land treatment facility				
d) disposal waste pile*				
Ground-Water Monitoring Program				
1. Was the ground-water monitoring program reviewed prior to site visit? If "No,"		X		
a) Was the ground-water program reviewed at the facility prior to site inspection?	X			
2. Has a ground-water monitoring program (capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility) been implemented? 725.190(a)	see memorandum			

*Listed separate from landfill for convenience of identification.

Completed checklist consists of Appendices A-1 and B.

	Yes	No	Unknown	Wavied
3. Has at least one monitoring well been installed in the uppermost aquifer hydraulically upgradient from the limit of the waste management area? 725.191(a)(1)	See memorandum			
a) Are ground-water samples from the uppermost aquifer, representative of background ground-water quality and not affected by the facility (as ensured by proper well number, locations and depths?)	See memorandum			
4. Have at least three monitoring wells been installed hydraulically downgradient at the limit of the waste handling or management area? 725.191(a)(2)	See memorandum			
a) Do well numbers, locations and depths ensure prompt detection of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer?	See memorandum			
5. Have the locations of the waste management areas been verified to conform with information in the ground-water program?	X			
a) If the facility contains multiple waste management components, is each component adequately monitored?	insufficient data			
6. Do the numbers, locations, and depths of the ground-water monitoring wells agree with the data in the ground-water monitoring system program? If "No," explain discrepancies.	X			
7. Well completion details. 725.191(c)				
a) Are wells properly cased?	See memorandum			
b) Are wells screened (perforated) and packed where necessary to enable sampling at appropriate depths?	X			
c) Are annular spaces properly sealed to prevent contamination of ground-water?	X			

	Yes	No	Unknown	Wavied
8. Has a ground-water sampling and analysis plan been developed? 725.192(a)	X			
a) Has it been followed?	X			
b) Is the plan kept at the facility:	X			
c) Does the plan include procedures and techniques for:				
1) Sample collection?	X			
2) Sample preservation?	X			
3) Sample shipment?	X			
4) Analytical procedures?	reference to 40 CFR, Part 265, Appendix III			
5) Chain of custody control?	X			
9. Are the required parameters in ground-water samples being tested quarterly for the first year? 725.192(b) and 725.192(c)(1)	see memorandum			
a) Are the ground-water samples analyzed for the following:				
1) Parameters characterizing the suitability of the ground-water as a drinking water supply? 725.192(b)(1)	X			
2) Parameters establishing ground-water quality? 725.192(b)(2)	X			
3) Parameters used as indicators of ground-water contamination? 725.192(b)(3)	X			
(i) For each indicator parameter are at least four replicate measurements obtained at each upgradient well for each sample obtained during the first year of monitoring? 725.192(c)(2)	X			
(ii) Are provisions made to calculate the initial background arithmetic mean and variance of the respective parameter concentrations or values obtained from the upgradient well(s) during the first year? 725.192(c)(2)	X			

	Yes	No	Unknown	Wavied
b) For facilities which have completed first year ground-water sampling and analysis requirements:	system modified. first year of background not complete on new system			
1) Have samples been obtained and analyzed for the ground-water quality parameters at least annually? 725.192(d)(1)	N/A			
2) Have samples been obtained and analyzed for the indicators of ground-water contamination at least semi-annually? 725.192(d)(2)	N/A			
c) Were ground-water surface elevations determined at each monitoring well each time a sample was taken? 725.192(e)	X			
d) If it was determined that modification of the number, location or depth of monitoring wells was necessary, was the system brought into compliance with 725.191(a)? 725.193	not determined			
10. Has an outline of a ground-water quality assessment program been prepared? 725.193(a)	X			
a) Does it describe a program capable of determining:				
1) Whether hazardous waste or hazardous waste constituents have entered the ground-water?	X			
2) The rate and extent of migration of hazardous waste or hazardous waste constituents in ground-water?	X			
3) Concentrations of hazardous waste or hazardous waste constituents in ground-water?	X			
b) Were records kept of the analyses and evaluations, specified in the ground-water quality assessment (throughout the active life of the facility)? 725.194(b)(1)	N/A			
1) If a disposal facility, were(are) records kept through the post-closure period as well?	N/A			

	Yes	No	Unknown	Wavied
11. Have records been kept of analyses for parameters in 725.192(c) and (d)? 725.194(a)(1)	X			
12. Have records been kept of ground-water surface elevations taken at the time of sampling for each well? 725.194(a)(1)	X			
13. Have records been kept of required elevations in 725.192(e)? 725.194(a)(1)	X			

*EPA will be proposing (Spring 1982) to replace this reporting requirement with an exception reporting system where reports will be submitted only where maximum contaminant levels or significant changes in the contamination indicators or other parameters are observed. EPA has delayed compliance stage for 14 a) above until August 1, 1982 (Federal Register, February 23, 1982, p. 7841-7842) to be coupled with exception reporting in the interim.

APPENDIX A-2 N/A as of 2/26/85 inspection

COMPLIANCE FORM FOR A FACILITY WHICH MAY BE AFFECTING GROUND-WATER QUALITY

Company Name: _____; IEPA I.D. Number: _____

Company Address: _____; USEPA I.D. Number: _____

_____ Inspector's Name: _____

_____

Company Contact/Official: _____; Branch/Organization: _____

Title: _____; Date of Inspection: _____

	Yes	No	Unknown
Type of facility: (check appropriately)			
a) surface impoundment	___	___	
b) landfill	___	___	
c) land treatment facility	___	___	
d) disposal waste pile	___	___	
1. Have comparisons of ground-water contamination indicator parameters for the upgradient well(s) 725.193(b) shown a significant increase (or pH decrease as well) over initial background?	___	___	
a) If "Yes," has this information been submitted to the Director according to 725.194(a)(2)(ii)?	___	___	
2. Have comparisons of indicator parameters for the downgradient wells 725.193(b) shown a significant increase (or pH decrease as well) over initial background?		___	___
a) If "Yes," were additional ground-water samples taken for those downgradient wells where the significant difference was determined? 725.193(c)(2)	___	___	
1) Were samples split in two?	___	___	
2) Was the significant difference due to human (e.g., laboratory) error? (If "Yes," do not continue.)	___	___	

APPENDIX -B

GROUND-WATER MONITORING AND ALTERNATE SYSTEM TECHNICAL INFORMATION FORM

APPENDIX B

GROUND-WATER MONITORING AND ALTERNATE SYSTEM TECHNICAL INFORMATION FORM

1.0 Background Data:

Company Name: Amoco - Riverfront ; EPA I.D.#: ILD980503106

Company Address: Amoco Riverfront Road
Wood River, Illinois
62095

Inspector's Name: M. Dilday ; Date: 2/26/85

1.1 Type of facility (check appropriately):

1.1.1	surface impoundment	X
1.1.2	landfill	
1.1.3	land treatment facility	
1.1.4	disposal waste pile	

1.2 Has a ground-water monitoring system been established? (Y/N) Y

1.2.1 Is a ground-water quality assessment program outlined or proposed? (Y/N) Y

If Yes,

1.2.2 Was it reviewed prior to the site visit? (Y/N) N

1.3 Has a ground-water quality assessment program been implemented or proposed at the site? (Y/N) N

If yes, Appendix C, Ground-Water Quality Assessment Program Technical Information Form must be utilized also.

2.0 Regional/Facility Map(s)

2.1 Is a regional map of the area, with the facility delineated, included? (Y/N) Y

If yes,

2.1.1 What is the origin and scale of the map? U.S.G.S. Topographic Map 1:24,000

2.1.2 Is the surficial geology adequately illustrated? (Y/N) N

2.1.3 Are there any significant topographic or surficial features evident? (Y/N) Y

If yes, describe Mississippi River is 50-100 ft from the waste management boundary

2.1.4 Are there any streams, rivers, lakes, or wet lands near the facility? (Y/N) Y

If yes, indicate approximate distances from the facility see 2.1.3 above

2.1.5 Are there any discharging or recharging wells near the facility? (Y/N) Y

If yes, indicate approximate distances from the facility. Amoco's production well generates a cone of depression, the center of which is approximately 2600 feet from the eastern border of the facility

2.2 Is a regional hydrogeologic map of the area included? (This information may be shown on 2.1) (Y/N) Y

If yes:

2.2.1 Are major areas of recharge/dishcarge shown? (Y/N) N

If yes, describe.

2.2.2 Is the regional ground-water flow direction indicated? (Y/N) N

2.2.3 Are the potentiometric contours logical? (Y/N) Y
If not, explain.

2.3 Is a facility plot plan included? (Y/N) Y

2.3.1 Are facility components (landfill areas, impoundments, etc.) shown? (Y/N) Y

2.3.2 Are any seeps, springs, streams, ponds, or wetlands indicated? (Y/N) N

2.3.3 Are the locations of any monitoring wells, soil borings, or test pits shown? (Y/N) Y

2.3.4 Is the facility a multi-component facility? (Y/N) Y

If yes:

2.3.4.1 Are individual components adequately monitored? (Y/N) insufficient data

2.3.4.2 Is a Waste Management Area delineated? (Y/N) Y

2.4 Is a site water table (potentiometric) contour map included? (Y/N) N

If yes,

2.4.1 Do the potentiometric contours appear logical based on topography and presented data? (Consult water level data) (Y/N) ____

2.4.2 Are groundwater flowlines indicated? (Y/N) ____

2.4.3 Are static water levels shown? (Y/N) ____

2.2.4 May hydraulic gradients be estimated? (Y/N) ____

2.4.5 Is at least one monitoring well located hydraulically upgradient of the waste management area(s)? (Y/N) ____

2.4.6 Are at least three monitoring wells located hydraulically downgradient of the waste management area(s)? (Y/N) ____

2.4.7 By their location, do the upgradient wells appear capable of providing representative ambient groundwater quality data? (Y/N) ____

If no, explain. _____

_____

_____

3.0 Soil Boring/Test Pit Details

3.1 Were soil borings/test pits made under the supervision of a qualified professional? (Y/N) Y

If yes,

3.1.1 Indicate the individual(s) and affiliation(s): Gene Schmidt - Amoco Hydrogeologist

3.1.2 Indicate the drilling/excavating contractor, if known John Mathes

3.2 If soil borings/test pits were made, indicate the method(s) of drilling/excavating:

- Auger (hollow or solid stem) X
- Mud rotary
- Air rotary
- Reverse rotary
- Cable tool
- Jetting
- Other, including excavation (explain)

3.3 List the number of soil borings/test pits made at the site

3.3.1 Pre-existing 39

3.3.2 For RCRA compliance indeterminate

3.4 Indicate borehole diameters and depths (if different diameters and depths use TABLE B-1).

3.4.1 Diameter; 6"

3.4.2 Depth: refer to boring logs

3.5 Were lithologic samples collected during drilling? (Y/N) Y

If yes,

3.5.1 How were samples obtained? (Check method(s))

- Split spoon X
- Shelby tube, or similar
- Rock coring
- Ditch sampling
- Other (explain)

3.5.2 At what interval were samples collected? 1 foot intervals between each 1½ foot split spoon samplings

3.5.3 Were the deposits or rock units penetrated described? (boring logs, etc.) (Y/N) Y

3.6 If test pits were excavated at the site, describe procedures. N/A

4.0 Well Completion Detail

4.1 Were the wells installed under the supervision of a qualified professional? (Y/N) Y

If yes:

4.1.1 Indicate the individual and affiliation, if known Gene Schmidt Amoco Hydrogeologist

4.1.2 Indicate the well construction contractor, if known John Mathes & Associates

4.2 List the number of wells at the site

4.2.1 Pre-existing 39

4.2.2 For RCRA Compliance 13

4.3 Well construction information (fill out INFORMATION TABLE B-2)

4.3.1 If PVC well screen or casing is used, are joints (couplings):

- Glued on X
- Screwed on X

4.3.2 Are well screens sand/gravel packed? (Y/N) Y

4.3.3 Are annular spaces sealed? (Y/N) Y

If yes, describe:

- bentonite slurry X
- Cement grout ____
- Other (explain) _____

_____

- Thicknesses of seals 2 feet

4.3.4 If "open hole" wells, are the cased portions sealed in place? (Y/N) N/A

If yes, describe how: _____

_____

_____

4.3.5 Are there cement surface seals? (Y/N) Y

If yes,

- How thick? 2 feet

4.3.6 Are the wells capped? (Y/N) Y

If yes,

- Do they lock? (Y/N) N

4.3.7 Are protective standpipes cemented in place? (Y/N) N

4.3.8 Were wells developed? (Y/N) Y

If yes, check appropriate method(s):

- Air lift pumping ____
- Pumping and surging ____
- Jetting (air) X
- Bailing ____
- Other (explain) _____

_____

5.0 Aquifer Characterization

5.1 Has the extent of the uppermost saturated zone (aquifer) in the facility area been defined? (Y/N) N

If yes,

5.1.1 Are soil boring/test pit logs included? (Y/N) ____

5.1.2 Are geologic cross-sections included? (Y/N) ____

INFORMATION TABLE B-2

	WELL NO.	RL-1	RL-2	RL-1S	RL-2S	RL-3	RL-4
	GROUND ELEVATION	421.78	423.65	421.67	423.85	425.85	424.79
	TOTAL DEPTH	49	34	14	14	39	39
WELL CASING	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER (in., ID)	2	2	2	2	2	2
	LENGTH (ft.)	41.50	27.17	6.75	6.83	31.58	28.75
	STICK-UP (ft.)	2.50	3.17	2.75	2.83	2.58	2.75
	TOP ELEVATION	424.28	426.82	424.42	426.68	428.43	427.54
	BOTTOM ELEVATION	382.78	399.65	417.67	419.85	396.85	398.79
WELL SCREEN	DEPTH TOP/BOTTOM	39/49	24/34	4/14	29/39	29/39	26/36
	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER (in., ID)	2	2	2	2	2	2
	LENGTH (ft.)	10	10	10	10	10	10
	SLOT SIZE (in.)	.010	.010	.020	.020	.010	.010
	TOP ELEVATION	382.78	399.65	417.67	419.85	396.85	398.79
	BOTTOM ELEVATION	372.78	389.65	407.67	409.85	386.85	388.79
OPEN HOLE OR SAND/GRAVEL PACK	DEPTH TOP/BOTTOM	18/49	23/34	3/14	3/14	21/39	22/39
	DIAMETER	6	6	6	6	6	6
	LENGTH	31	10	11	11	18	17
	TOP ELEVATION	403.78	399.65	418.67	420.85	404.85	402.79
	BOTTOM ELEVATION	372.78	389.65	407.67	409.85	386.85	385.79

INFORMATION TABLE B-2

	WELL NO.	RL-4S	RL-5	RL-6	RL-7	RL-8	RL-9
	GROUND ELEVATION	424.97	426.36	431.21	427.92	428.35	427.93
	TOTAL DEPTH (ft.)	19	34	44	39	39	39
WELL CASING	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER (in., ID)	2	2	2	2	2	2
	LENGTH (ft.) TOC → screen top	10.58	26.92	36.25	31.67	32.10	32.16
	STICK-UP (ft.)	2.58	2.92	2.25	2.67	3.00	2.50
	TOP ELEVATION	427.55	429.28	433.46	430.59	431.35	430.43
	BOTTOM ELEVATION	416.97	402.36	397.21	398.92	399.25	398.27
WELL SCREEN	DEPTH TOP/BOTTOM	8 / 18	24 / 34	34 / 44	29 / 39	29 / 39	29 / 39
	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER (in., ID)	2	2	2	2	2	2
	LENGTH (ft.)	10	10	10	10	10	10
	SLOT SIZE (in.)	.010	.010	.010	.010	.010	.010
	TOP ELEVATION	416.97	402.36	397.21	398.92	399.25	398.27
	BOTTOM ELEVATION	406.97	392.36	387.21	388.92	389.25	388.93
OPEN HOLE OR SAND/GRAVEL PACK	DEPTH TOP/BOTTOM	8 / 19	19 / 34	20 / 44	20 / 39	20 / 39	22 / 39
	DIAMETER (in.)	6	6	6	6	6	6
	LENGTH	11	15	24	19	19	17
	TOP ELEVATION	416.97	407.36	411.21	407.92	408.25	405.93
	BOTTOM ELEVATION	405.97	392.36	387.21	388.92	389.25	388.93

INFORMATION TABLE B-2

	WELL NO.	RL-9S	RL-10	RL-11S	RL-12S	RL-13S	RL-14S
	GROUND ELEVATION	428.48	425.38	423.93	423.09	426.82	429.19
	TOTAL DEPTH (ft.)	14	34	19	14	14	14
WELL CASING	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER (in., ID)	2	2	2	2	2	2
	LENGTH (ft.)	6.08	26.5	11.92	7.17	6.67	6.25
	STICK-UP (ft.)	2.08	2.50	2.92	3.17	2.67	2.25
	TOP ELEVATION	430.56	427.88	426.85	426.26	429.49	431.44
	BOTTOM ELEVATION	424.48	401.38	414.93	419.09	422.82	425.19
WELL SCREEN	DEPTH TOP/BOTTOM	4 / 14	24 / 34	9 / 19	4 / 14	4 / 14	4 / 14
	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER (in., ID)	2	2	2	2	2	2
	LENGTH (ft.)	10	10	10	10	10	10
	SLOT SIZE (in.)	.020	.010	.020	.020	.020	.020
	TOP ELEVATION	424.48	401.38	414.93	419.09	422.82	425.19
	BOTTOM ELEVATION	414.48	391.38	404.93	409.09	412.82	415.19
OPEN HOLE OR SAND/GRAVEL PACK	DEPTH TOP/BOTTOM	3 / 14	18 / 34	14 / 19	3 / 14	3 / 14	3 / 14
	DIAMETER (in.)	6	6	6	6	6	6
	LENGTH (ft.)	11	16	5	11	11	11
	TOP ELEVATION	425.48	401.38	409.93	420.09	423.82	426.19
	BOTTOM ELEVATION	414.48	391.38	404.93	409.09	412.82	415.19

INFORMATION TABLE B-2

	WELL NO.	RL-7S	RL-6S				
	GROUND ELEVATION	428.21	?				
	TOTAL DEPTH (ft.)	19	22				
WELL CASING	TYPE MATERIAL	PVC	steel				
	DIAMETER (in., ID)	2	2				
	LENGTH (ft.)	11.42	14				
	STICK-UP (ft.)	2.42	2.00				
	TOP ELEVATION	430.63	?				
	BOTTOM ELEVATION	419.21	?				
WELL SCREEN	DEPTH TOP/BOTTOM	9 / 19	12 / 22	/	/	/	/
	TYPE MATERIAL	PVC	stainless steel				
	DIAMETER (in., ID)	2	2				
	LENGTH (ft.)	10	10				
	SLOT SIZE (in.)	.020	?				
	TOP ELEVATION	419.21	?				
	BOTTOM ELEVATION	409.21	?				
OPEN HOLE OR SAND/GRAVEL PACK	DEPTH TOP/BOTTOM	8 / 19	12 / 22	/	/	/	/
	DIAMETER (in.)	6	?				
	LENGTH (ft.)	11	10				
	TOP ELEVATION	420.21	?				
	BOTTOM ELEVATION	409.21	?				

5.2 Is there evidence of confining (low permeability) layers beneath the site? (Y/N) Y

If yes,

5.2.1 Is the areal extent and continuity indicated? (Y/N) Y

5.2.2 Is there any potential for saturated conditions (perched water) to occur above the uppermost aquifer? (Y/N) Y

If yes, give details: a shallow water table exists above the zone previously monitored; a shallow monitoring program has been implemented

a) Should or is this perched zone being monitored? (Y/N) Y

Explain the zone is being monitored

5.2.3 What is the lithology and texture of the uppermost saturated zone (aquifer)? sand and silt interbedded with some clays, all are alluvial valley train deposits

5.2.4 What is the saturated thickness, if indicated? not indicated

5.3 Were static water levels measured? (Y/N) Y

If yes,

5.3.1 How were the water levels measured (check method(s)).

- Electric water sounder X
- Wetted tape X
- Air line
- Other (explain)

5.3.2 Do fluctuations in static water levels occur? (Y/N) Y

If yes,

5.3.2.1 Are they accounted for (e.g. seasonal, tidal, etc.)? (Y/N) Y

If yes, describe: seasonal fluctuations, changes in River stages, and industrial pumpage of the aquifer

5.3.2.2 Do the water level fluctuations alter the general ground-water gradients and flow directions? (Y/N) See 9/22/83 inspection

If yes,

5.3.2.3 Will the effectiveness of the wells to detect contaminants be reduced? (Y/N) see 9/22/83 inspection

Explain _____

_____

_____

5.3.2.4 Based on water level data, do any head differentials occur that may indicate a vertical flow component in the saturated zone? (Y/N) Y

If yes, explain hydraulic head difference, according to the shallow groundwater table report, is approximately twenty-eight feet between the upper groundwater table and the sand aquifer

5.4 Have aquifer hydraulic properties been determined? (Y/N) Y

If yes,

5.4.1 Indicate method(s):

- Pumping tests X
- Falling/constant head tests ____
- Laboratory tests (explain) ____

_____

_____

5.4.2 If determined, what are the values for:

- hydraulic conductivity $1.1 \times 10^{-4} - 8.4 \times 10^{-5}$ cm/sec.
- Transmissivity ____
- Storage coefficient ____
- Leakage ____
- Permeability ____
- Porosity ____
- Specific capacity ____

5.4.3 In cases where several tests were undertaken, were discrepancies in the results evident? (Y/N) indeterminate

If yes, explain _____

_____

5.4.4 Were horizontal ground-water flow velocities determined? (Y/N) N

If yes, indicate rate of movement _____

_____

6.0 Well Performance

6.1 Are the monitoring wells screened in the uppermost aquifer? (Y/N) Y

6.1.1 Is the full saturated thickness screened? (Y/N) N

6.1.2 For single completions, are the intake areas in the: (check appropriate levels)

- Upper portion of the aquifer X
- Middle of the aquifer ____
- Lower portion of the aquifer ____

6.1.3 For well clusters, are the intake areas open to different portions of the aquifer? (Y/N) Y

6.1.4 Do the intake levels of the monitoring wells appear to be justified due to possible contaminant density and groundwater flow velocity? (Y/N) insufficient data

7.0 Ground-Water Quality Sampling

7.1 Is a sampling (groundwater quality) program and schedule included? (Y/N) Y

7.2 Are sample collection field procedures clearly outlined? (Y/N) Y

7.2.1 How are samples obtained: (check method(s))

- Air lift pump ____
- Submersible pump ____
- Positive displacement pump ____
- Centrifugal pump ____
- Peristaltic or other suction-lift pump ____
- Bailer (PVC) X
- Other (describe) ____

7.2.2 Are all wells sampled with the same equipment and procedures? (Y/N) Y

If no, explain ____

7.2.3 Are adequate provisions included to clean equipment after sampling to prevent cross-contamination between wells? (Y/N) N see memorandum (additional comments)

7.2.4 Are organic constituents to be sampled? (Y/N) Y

If yes,

7.2.4.1 Are samples collected with equipment to minimize absorption and volatilization? (Y/N) N

If yes,

Describe equipment _____

_____

_____

8.0 Sample Preservation and Handling

8.1 Have appropriate sample preservation and preparation procedures been followed (filtration and preservation where appropriate)? (Y/N) Y

8.2 Are samples refrigerated? (Y/N) Y

8.3 Are EPA recommended sample holding period requirements adhered to? (Y/N) Y

8.4 Are suitable container types used? (Y/N) Y

8.5 Are provisions made to store and ship samples under cold conditions (ice packs, etc.)? (Y/N) Y

8.6 Is a chain of custody control procedure clearly defined? (Y/N) Y

8.7 Is a specific chain of custody form illustrated? (Y/N) Y

If yes,

8.7.1 Will this form provide an accurate record of sample possession from the moment the sample is taken until the time it is analyzed? (Y/N) Y

9.0 Sample Analysis and Record Keeping

9.1 Is sample analysis performed by a qualified laboratory? (Y/N) Y

Indicate lab Amoco Research Center, Environmental Analysis, and CEP, Inc

9.2 Are analytical methods described in the records? (Y/N) Y by reference

9.2.1 Are analytical methods acceptable to EPA? (Y/N) Y

9.3 Are the required drinking water suitability parametters tested for? (Y/N) Y

9.4 Are the required groundwater quality parameters tested for? (Y/N) Y

9.5 Are the required groundwater contamination indicator parameters tested for? (Y/N) Y

9.6 Are any analytical parameters determined in the field? (Y/N) Y

Identify:

- pH X
- Temperature X
- Specific conductance X
- Other (describe) _____

_____

9.7 Is a plan included to record information about each sample collected during the groundwater monitoring program? (Y/N) Y

9.7.1 Are field activity logs included? (Y/N) Y

9.7.2 Are laboratory results included? (Y/N) Y

9.7.3 Are field procedures recorded? (Y/N) Y

9.7.4 Are field parameter determinations included? (Y/N) Y

9.7.5 Are the names and affiliation of the field personnel included? (Y/N) Y

9.8 Are statistical analyses planned or shown for all water quality results where necessary? (Y/N) Y

9.8.1 Is an analysis program set-up which adheres to EPA guidelines? (Y/N) Y

9.8.2 Is Student's t-test utilized? (Y/N) Y
If other evaluation procedure used, identify _____

_____

9.8.3 Are provisions made for submitting analysis reports to the ~~Regional Administrator?~~ Director ? (Y/N) Y

10.0 Site Verification

10.1 Plot Plan indicating the locations of various facility components, ground-water monitoring wells, and surface waters? (Y/N) Y

10.1.1 Is the plot plan used for the inspection the same as in the monitoring program plan documentation? (Y/N) Y

If not, explain _____

_____

10.1.2 Are all of the components of the facility identified during the inspection addressed in the monitoring program documentation? (Y/N) Y

If not, explain _____

_____

10.1.3 Are there any streams, lakes or wetlands on or adjacent to the site? (Y/N) Y

If yes, indicate distances from waste management areas _____

Mississippi River 50-100 ft

_____

10.1.4 Are there any signs of water quality degradation evident in the surface water bodies? (Y/N) N

If yes, explain _____

_____

_____

10.1.5 Is there any indication of distressed or dead vegetation on or adjacent to the site? (Y/N) N

If yes, explain _____

_____

_____

10.1.6 Are there any significant topographic or surficial features on or near the site (e.g., recharge or discharge areas)? (Y/N) Y

If yes, explain facility is located within the 100 year floodplain

10.1.7 Are the monitor well locations and numbers in agreement with the monitoring program documentation? (Y/N) Y

If no, explain _____

_____

10.1.7.1 Were locations and elevations of the monitor wells surveyed into some known datum? (Y/N) Y

If not, explain _____

_____

10.1.7.2 Were the wells sounded to determine total depth below the surface? (Y/N) N

If not, explain _____

_____

10.1.7.3 Were discrepancies in total depth greater than two feet apparent in any well? (Y/N) indeterminate

If yes, explain _____

_____

10.1.8 Was ground water encountered in all monitoring wells? (Y/N) Y

If not, indicate which well(s) were dry _____

_____

10.1.9 Were water level elevations measured during the site visit? (Y/N) N

If yes, indicate well number and water level elevation _____

_____

If not, explain no samples were taken during the site visit